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10/802,213	03/17/2004	Steven F. Livengood	A2507-US-NP	3559

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EXAMINER	
CRUZ, IRIANA	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/802,213	LIVENGOOD ET AL.	
	Examiner	Art Unit	
	IRIANA CRUZ	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-13, 15, 17-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tagami et al. (US Patent Number 5,237,425) in view of Yoshida et al. (US Publication Number 2005/01714586 A1).

Regarding **Claim 1**, Tagami'425 shows a method for converting input data representing a color formed from only two colors to output data representing a color in a full color space **(i.e., from having two colors ((black and one of red blue or green)) to full colors ((combination of highlight colors/RGB)). See Column 1, Lines 20-22 and See Figure 26)**, comprising the steps of: receiving the two-color input data in the form of two colors, a primary color and a secondary color **(i.e., from having two colors ((black and one of red or blue or green)) to full colors ((highlight colors/RGB)). See Column 1, Lines 20-22 and See Figure 26)**; mapping each color of the two-color input data to an equivalent color defined in the full color space by applying

a first mapping function to each color of the two-color input data **(i.e., the two input colors are mapped to its equivalent RGB colors on index, ink catalogs/palette. See Column 8, Lines 36-42 and See Figure 13)**.

Tagami'425 fails to show a method determining, from the two-color input data, a rendering characteristic for each of the primary color and the secondary color; based upon the rendering characteristics, and the primary and secondary colors, representing a combination of the primary and secondary colors, and the associated rendering characteristics, as an intermediate output; and processing the intermediate output using a second function to generate the output data representing a single color defined in the full color space.

Yoshida'586 teaches a method determining, from the two-color input data, a rendering characteristic for each of the primary color and the secondary color **(i.e., color conversion of first and second colors where gamut mapping to map colors is used ((rendering/limiting color gamut)). See Paragraphs 8-11)**; based upon the rendering characteristics, and the primary and secondary colors, representing a combination of the primary and secondary colors, and the associated rendering characteristics, as an intermediate output **(i.e., the color conversion table contains the intermediate value information; See Paragraphs 8-11)**; and processing the intermediate output using a second function to generate the output data representing a single color defined in the full color space **(i.e., color conversion function is used to find the color defines in full color space. See Paragraphs 9-12 and 14-16)**.

Having the system of Tagami'425 and then given the well-established teaching of the Yoshida'586, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Tagami'425 with the teachings of Yoshida'586 by adding determining, from the two-color input data, a rendering characteristic for each of the primary color and the secondary color; based upon the rendering characteristics, and the primary and secondary colors, representing a combination of the primary and secondary colors, and the associated rendering characteristics, as an intermediate output; and processing the intermediate output using a second function to generate the output data representing a single color defined in the full color space, in order to improve the efficiency and accuracy of the system by adding an intermediate value for processing.

Regarding **Claim 2**, Tagami'425 shows the method wherein the first function is user-defined **(i.e., the user defines the colors to be used on the catalogs where later the two input colors are going to be mapped. See Column 1, Lines 31-50)**.

Regarding **Claim 3**, Tagami'425 shows a method wherein the user-defined function is a user-defined map from a highlight-color space to full-color space **(i.e., the user can defines palettes composed of full colors/RGB for mapping from highlight ((black, white and one of red or blue or green)) color to full color ((combination of highlight colors)). See Column 1, Line 39-50)**.

Regarding **Claim 4**, the combination of Tagami'425 and Yoshida'586 shows a method wherein the step of representing a combination of the primary and secondary

colors, and the associated rendering characteristics, as an intermediate output includes converting the secondary color into an HSV representation and applying the percentage of highlight to the HSV representation **(i.e., the rendering/screen characteristic represent the intermediate output and the two input colors are converted applying percentages of highlight colors. See Column 7, Lines 43-50)**.

Regarding **Claim 5**, the combination of Tagami'425 and Yoshida'586 shows a method wherein the step of processing the intermediate output using a second function to generate the output data representing a single color defined in the full color space, includes applying a percentage black to the intermediate value and then converting the intermediate value to a full-color representation using a programmatic function **(i.e., the color conversion function. See Paragraphs 8-11 in reference Yoshida'586)**.

Regarding **Claim 6**, Tagami'425 shows a method for converting input data representing a color formed from only two colors to output data representing a color formed from at least three colors **(i.e., from having two colors ((black and one of red blue or green)) to full colors ((combination of highlight colors/RGB/three colors)). See Column 1, Lines 20-22 and See Figure 26)**, comprising the steps of: receiving the two-color input data in the form of two colors, a primary color and a secondary color **(i.e., from having two colors ((black and one of red or blue or green)) to full colors ((highlight colors/RGB)). See Column 1, Lines 20-22 and See Figure 26)**; determining, from each color of the two-color input data, an equivalent color defined in a full color space by applying a first function to each color of the two color input data **(i.e., the two input colors are mapped to its equivalent RGB colors on**

index, ink catalogs/palette. See Column 8, Lines 36-42 and See Figure 13 and See Column 14, Lines 15-40);determining, from the two-color input data, a screen characteristic for the primary color and the secondary color **(i.e., screen characteristic for colors. See Column 5, Lines 33-40 and See Column 6, Lines 54-67 and See Column 7, Lines 5-15 and 42-60)**; determining which screen characteristic is of a lesser value, and then determining if the lesser is equal to zero **(i.e., lesser value equal to 0. See Column 8, Lines 36-42 and 57-65);** if the lesser value screen characteristic is zero, generating an intermediate output is a function of only one of the primary and secondary colors **(i.e., lesser value equal to 0. See Column 8, Lines 36-42 and 57-65)**.

Tagami'425 fails to show a method determining, from the two-color input data, generating an intermediate output that is a function of both the primary and secondary colors, wherein the intermediate output include a highlight color, a highlight color percentage and a black color percentage; and processing the intermediate output using a second function to generate the output data representing a single color defined in at least threes color space.

Yoshida'586 teaches a method determining, from the two-color input data, generating an intermediate output that is a function of both the primary and secondary colors, wherein the intermediate output include a highlight color, a highlight color percentage and a black color percentage **(i.e., the color conversion table contains the intermediate value information; See Paragraphs 8-11)**; and processing the intermediate output using a second function to generate the output data representing a

single color defined in at least threes color space **(i.e., color conversion function is used to find the color defines in full color space/RGB/three colors. See Paragraphs 9-12 and 14-16)**.

Having the system of Tagami'425 and then given the well-established teaching of the Yoshida'586, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Tagami'425 with the teachings of Yoshida'586 by adding determining, from the two-color input data, a rendering characteristic for each of the primary color and the secondary color; based upon the rendering characteristics, and the primary and secondary colors, representing a combination of the primary and secondary colors, and the associated rendering characteristics, as an intermediate output; and processing the intermediate output using a second function to generate the output data representing a single color defined in the full color space, in order to improve the efficiency and accuracy of the system by adding an intermediate value for processing.

Regarding **Claim 7**, the combination of Tagami'425 and Yoshida'586 shows a method wherein the step of generating an intermediate output that is a function of only one of the primary and secondary colors, comprises: determining if the primary color is black; and if the primary color is black, setting the highlight color to white, setting the highlight color percentage to 100% and setting the black percentage equal to the greater of the two screen characteristics, otherwise setting the highlight color to the primary color and setting the highlight color percentage equal to the greater of the two screen characteristics, and setting the black percentage to 0% **(i.e., the color**

conversion table contains the intermediate value information; See Paragraphs 8-11).

Regarding **Claim 8**, Tagami'425 shows a method wherein the screen characteristics are percentage values associated with the screens for the respective colors **(i.e., screen characteristic for colors. See Column 5, Lines 33-40 and See Column 6, Lines 54-67 and See Column 7, Lines 5-15 and 42-60)**.

Regarding **Claim 9**, the combination of Tagami'425 and Yoshida'586 shows a method wherein the step of generating an intermediate output that is a function of both the primary and secondary colors, comprises: determining if the primary color is black; and if the primary color is black, setting the highlight color to the secondary color and setting the highlight color percentage equal to the lesser of the two screen characteristics and setting the black percentage equal to the greater of the two screen characteristics, otherwise setting the highlight color to the primary color and the highlight color percentage equal to the greater of the two screen characteristics, and setting the black percentage equal to the lesser of the two screen characteristics **(i.e., the color conversion table contains the intermediate value information; See Paragraphs 8-11)**.

Regarding **Claim 10**, Tagami'425 shows a method wherein the screen characteristics are percentage values associated with the screens for the respective colors **(i.e., screen characteristic for colors. See Column 5, Lines 33-40 and See Column 6, Lines 54-67 and See Column 7, Lines 5-15 and 42-60)**.

Regarding **Claim 11**, Tagami'425 shows a method wherein the screen characteristic is a percentage value **(i.e., the screen characteristic can be represented by percentages of values. See Column 7, Lines 43-51)**.

Regarding **Claim 12**, Tagami'425 shows a method wherein the step of receiving the two-color input data comprises locating the color data in an ink catalog and retrieving the data therefrom **(i.e., the color data is found in the ink catalog. See Column 3, Lines 19-33 and See Column 9, Lines 4-10)**.

Regarding **Claim 13**, Tagami'425 shows a method wherein the first function is user-defined. **(i.e., the used defines the colors to be used on the catalogs where later the two input colors are going to be mapped. See Column 1, Lines 31-50)**.

With regards to method **Claim 15**, the limitation of the claim 15 are corrected by limitation of claim 1 and 6 above. The steps of claim 15 read into the function step of claim 1 and 6.

Regarding **Claim 17**, Tagami'425 shows a method wherein the schema includes a color catalog which itself includes a plurality of palettes **(i.e., an ink color catalogue that includes many palettes. See Column 3, Lines 15-21 and 45-54 on reference Tagami'425)**.

Regarding **Claim 18**, Tagami'425 shows a method wherein the palettes include colors defined in terms of a standard color model **(See Column 4, Line 35-45 and 65-68 on reference Tagami'425)**.

Regarding **Claim 19**, Tagami'425 shows a method wherein the standard color model is sRGB **(See Column 4, Line 6-15 on reference Tagami'425)**.

2. **Claims 14 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tagami et al. (US Patent Number 5,237,425) in view of Yoshida et al. (US Publication Number 2005/01714586 A1) and in further in view of Draaisma (US Publication Number 2003/0227638 A1).

Regarding **Claim 14**, The combination of Tagami'425 and Yoshida'586 shows a method where for converting input data representing a color formed from only two primary colors to output data representing a color formed from at least three colors **(i.e., from having an input of two primary colors ((black and one of red blue or green)) to having an output of at least three colors ((full color/RGB/Black and a highlight)). See Column 1, Lines 20-22 and See Figure 26)**.

Tagami'425 fails to show the method wherein the output data representing a single color defined in at least three color spaces is represented in the nature of an extensible markup language schema.

Draaisma'638 teaches a method wherein the output data representing a single color defined in at least three color space is represented in the nature of an extensible markup language schema **(i.e., the printer uses the structural format/schema of extensible markup language/XML. See Paragraph 29).**

Having the system of Tagami'425 and Yoshida'586 and then given the well-established teaching of the Draaisma'638, it would have been obvious to one having

ordinary skill in the art at the time of the invention was made to modify the system as suggested by the combination of Tagami'425 and Yoshida'586 with the teachings of Draaisma'638 by adding a method wherein the output data representing a single color defined in at least three color space is represented in the nature of an extensible markup language schema, in order to improve the variability of the system by helping not restricting the printer to just one format giving more format option for the image processing as suggested in Paragraph 29 of reference Draaisma'638.

With regards to method **Claim 16**, the limitation of the claim 16 are corrected by limitation of claim 14 above. The steps of claim 16 read into the function step of claim 14.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IRIANA CRUZ whose telephone number is (571)270-3246. The examiner can normally be reached on Monday-Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Y. Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

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June 22, 2008
/I. C./
Examiner, Art Unit 2625